UCRL-JC-114873 Abs Rev 1

Abstract Submitted
for the Thirteenth International Conference on Laser Interactions and Related Plasma Phenomena (LIRPP)
April 13-18, 1997

Semiclassical Atomic Model.* R. M. MORE, J. LEVATIN, Lawrence Livermore National Laboratory, T. KATO(**) — Simulation of laser-matter interactions requires a broad range of atomic data for nonequilibrium (NTLE) atomic processes, equations of state, photon absorption opacity and charged-particle stopping powers. There is a continuing need for a simple and flexible source of atomic data which could improve the results given by the screened hydrogenic model without requiring too much computer time. We have developed techniques for working with WKB wave functions including relativistic corrections and calculation of matrix elements for radiative transitions. Here we assemble these results in a semiclassical j-j coupled relativistic self-consistent field model. This model obeys various consistency tests and is embodied in a simple and robust computer code.
*Supported in part under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract No. W-7405-ENG-48.
(**)NIFS, Nagoya, Japan; supported by U.S.-Japan Cooperation Program (Japan Society for the Promotion of Science).

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